

Amendments to the Specification

Please replace the paragraph that begins on page 1, line 7, with the following amended paragraph:

The invention relates generally to data storage systems and, more particularly, to a method for increasing track density of the magnetic storage medium associated with the data storage system.

Please replace the paragraph that begins on page 6, line 8, with the following amended paragraph:

The A and B bursts 426-432, as well as other servo information, are written to the surface 314 of the disk 104 using a servo track writer (STW) after the disk 104 is assembled into the disk drive during the manufacturing process. It is these A and B bursts which define the location of the written tracks on the disk 104. That is, on a non-ideal track (such as track 318 of Figure 3) the A and B bursts are written such that the centerline of the track is not smooth, but rather is perturbed; this is the source of RRO. Further, a transducer can be made to position itself in a window positionally relative to the path of an ideal track by adding an appropriate offset value to the PES signal. Offset values, relative to the known RRO, may be used to modify the controller commands to the actuator and correct the RRO as the transducer follows the track.[[.]] RRO correction values are stored within the servo portions 248 of each sector 322 of the disk for use in positioning the transducer 106 in an approximation of ideal track path, such as 316, during track following operations.

Please replace the paragraph that begins on page 9, line 21, with the following amended paragraph:

By adjusting the write fault gate (WFG) threshold to the PES, ~~we have~~ a more uniform margin to encroachment failure is provided across the entire stroke of the actuator; i.e., prior art had more margin at the ID. WFG thresholds provide the limit as to how far a transducer can write off-track, so with equalized encroachment margin, tracks can be spaced closer together at the ID[;]. ~~this is the same thing as saying that~~ In other words, the maximum WFG threshold will be made constant as a percent of track-spacing by increasing track-spacing density where the PES is low. This provides a net gain in capacity through servo track-writing of more tracks on the disk where the PES is low.

Please replace the paragraph that begins on page 10, line 14, with the following amended paragraph:

The servo track-writing function, where ~~we increase~~ track-spacing density is increased, can be performed by a conventional servo track-writer, by self-servo track-writing, or by a variable track-spacing servo system. It will be obvious to those skilled in the art upon reading this disclosure that other implementations are also possible.

Please replace the paragraph that begins on page 14, line 3, with the following amended paragraph:

In one aspect of the present invention, the lookup table 26 stores multiple write fault gate values, i.e., a separate, variable, value for each of the tracks on the disk drive 100 associated with a transducer 106. These write fault gate threshold values are

specified as a variable function of radial position of the track on the corresponding disk surface. Thus, when data is being written to a target track on a disk surface, a write fault gate threshold value corresponding to that particular track is retrieved from the lookup table and used during the write operation. Again, the stored PES data may be used to increase track-spacing density where the PES is low[[]], ~~With~~ with the operation performed by the servo track-writer, or a self-servo write system.